**Marine Life Protection Act Initiative** 



Marine Birds and Marine Mammals Evaluations for Round 2 Draft MPA Proposals in the MLPA North Coast Study Region

Presentation to the MLPA Blue Ribbon Task Force July 21, 2010 • Fort Bragg, CA

Ron LeValley • MLPA Master Plan Science Advisory Team

### **Methods Overview**

Analyses quantify MLPA North Coast Study Region populations likely to benefit from marine protected areas (MPAs) for three use categories:

- 1. Breeding
- 2. Resting
- 3. Foraging

\_



### **Notes about Round 2 Analyses**

- Marine mammal analyses considered only proposed state marine reserves (SMRs) and special closures
- Marine bird analyses included proposed SMRs, special closures and some state marine conservation areas (SMCAs)
- SMCAs which proposed tribal uses were included separately because don't have information on uses to know if they meet criteria to be included in the marine bird analyses



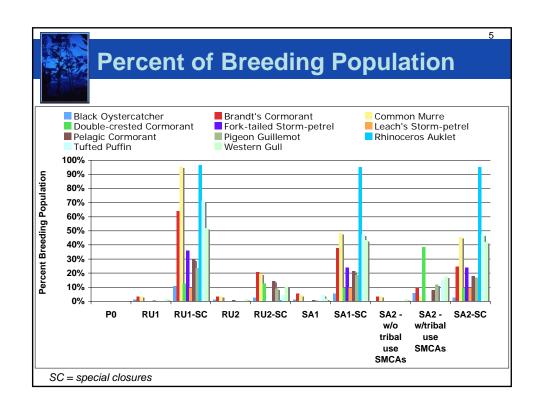
#### **Marine Bird and Mammal Analyses**

# Analysis 1: Protection at Breeding Sites Investigated:

- percent (%) of bioregion marine bird breeding populations protected
- number of pinniped rookery sites protected
- protection of important marine bird breeding hot spots
- protection of important pinniped hot spots







Ma	rine	Bird Br	eeding	Hot Sp	oots
Breeding Hot Spots	Proposal 0	Ruby 1	Ruby 2	Sapphire 1	Sapphire 2
Castle Rock		Castle Rock Special Closure		Castle Rock Special Closure	Castle Rock Specia Closure (seasonal)
False Klamath Rock		False Klamath Rock Special Closure	False Klamath Rock Special Closure		,
Green Rock		Green Rock Special Closure			
Flatiron Rock		Flatiron Special Closure			
False Cape Rocks		False Cape Rock Special Closure			
Steamboat Rock		South Cape Mendocino SMR Steamboat Rock Special Closure	South Cape Mendocino SMR	South Cape Mendocino SMR Steamboat Rock Special Closure	South Cape Mendocino SMR Steamboat Rock Special Closure
Rockport Rocks		Rockport Rocks Special Closure	WICHGOOMO CIVIT	Opecial Glosure	Opecial Closure
Cape Viscaino		Vizcaino Rock Special Closure (seasonal)	Vizcaino Rock Special Closure (seasonal)	Vizcaino Rock Special Closure (seasonal)	



## **Marine Mammal Hot Spots**

<b>Population Hot</b>					
Spots	Proposal 0	Ruby 1	Ruby 2	Sapphire 1	Sapphire 2
		Southwest Seal		Southwest Seal	
Southwest		Rock Special		Rock Special	
Seal Rock*		Closure		Closure	
Sugarloaf		Sugarloaf Island	Sugarloaf Island	Sugarloaf Island	Sugarloaf Island
Island*		Special Closure	Special Closure	Special Closure	Special Closure
Vicinity of					
Castle Rock,		Castle Rock Special		Castle Rock	Castle Rock Special
Crescent City		Closure		Special Closure	Closure (seasonal)
South Bay,					
Humboldt Bay					
Arcata Bay,					
Humboldt Bay					
Mouth of the					
Eel River					

\* Steller Sea Lion Rookery



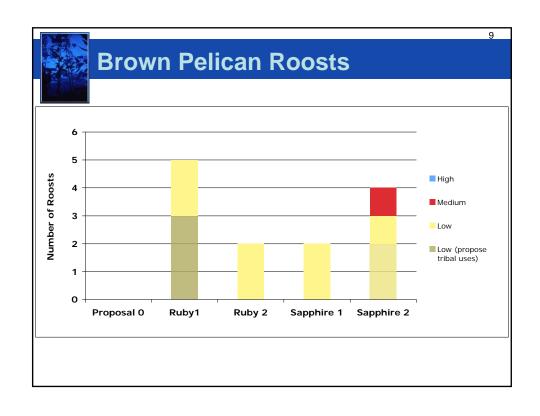
# **Marine Bird and Mammal Analyses**

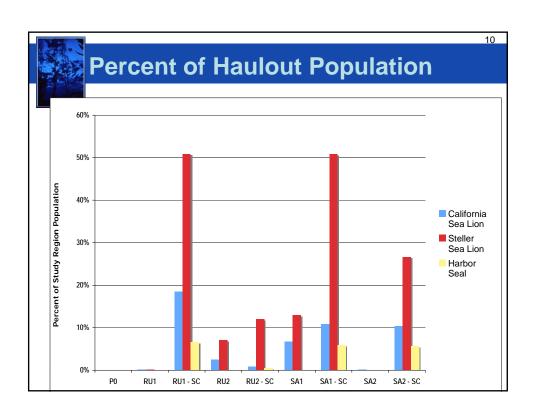
Analysis 2: Protection at Roosting and Haulout Sites Investigated:

- percent (%) of study region populations protected for pinnipeds
- number and size of Brown Pelican roosts









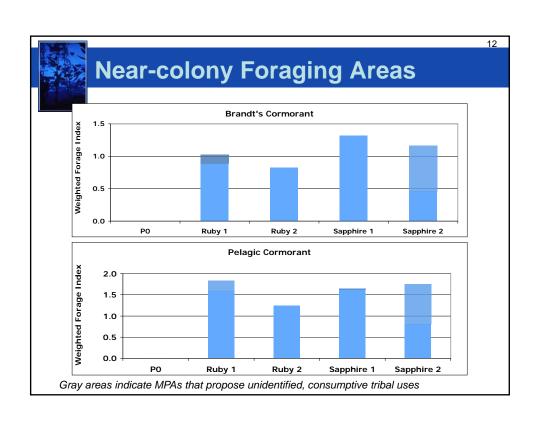


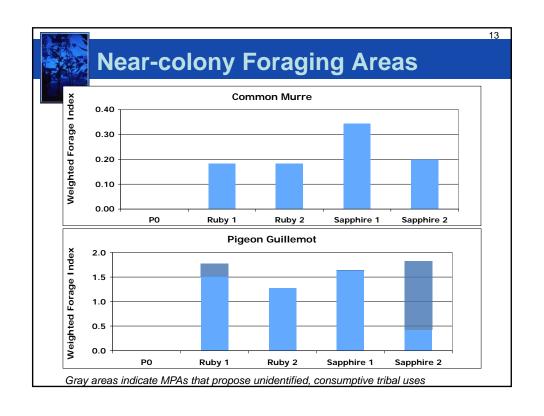
# **Marine Bird and Mammal Analyses**

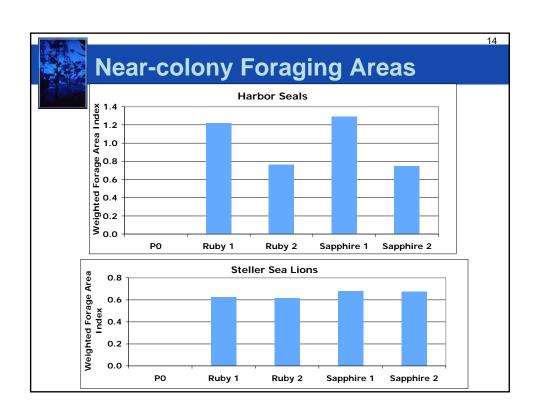
**Analysis 3: Protection at Near-colony and At-sea Foraging Sites** 

Investigated amount of foraging area protected, number of animals benefiting









Neritic Neritic	For	agir	ng An	alysis	s: Bir	ds
Name	Species Diversity	Area (sq. mi)	Loons, Grebes and Scoters	Guillemots and Pelagic Cormorants	Marbled Murrelets	All Other Seabirds
			Ave	rage Number o	f Animals Sig	hted
Proposal 0	-	-	-	=	-	-
Ruby 1 - w/o tribal use		•	-	-		
SMCAs	17	9.4	218.32	36.02	126.12	630.54
Ruby 1 - w/tribal use SMCAs	17	15.02	267.49	36.02	154.45	1195.27
Ruby 1 - special closures	16	0.23		3.46	-	21.24
Ruby 2 - w/o tribal use						
SMCAs	17	5.99	186.96	71.23	139.07	-
Ruby 2 - w/tribal use SMCAs	17	5.99	186.96	71.23	139.07	-
Ruby 2 - special closures	16	0.08	-	0.88	-	1.54
Sapphire 1 - w/o tribal use						
SMCAs	17	10.15	248.14	81.46	174.52	359.15
Sapphire 1 - w/tribal use						
SMCAs	17	10.15	248.14	81.46	174.52	359.15
Sapphire 1 - special closures	8	0.01	-	-	-	1.54
Sapphire 2 - w/o tribal use						
SMCAs	17	2.78	-	-	-	359.15
Sapphire 2 - w/tribal use SMCAs	17	16.33	356.57	99.77	237.49	359.15
Sapphire 2 - special closures	- 17	-	-	-		-



# Neritic Foraging Analysis: Mammals

	Area	All	Harbor	
Draft MPA Proposal	(sq. mi)	Pinnipeds	Porpoise	Gray Whale
		Average N	umber of Anim	als Sighted
Proposal 0	-	_	-	-
Ruby 1	5.54	53.3	-	-
Ruby 1 - special				•
closures	0.32	2.2	-	0.1
Ruby 2	5.54	53.3	-	-
Ruby 2 - special				
closures	0.17	1.3	-	0.1
Sapphire 1	9.74	69.3	-	-
Sapphire 1 - special				
closures	0.15	1.9	-	-
Sapphire 2	9.63	69.2	-	-
Sapphire 2 - special				
closures	0.14	1.9	-	-





## **Neritic Foraging: Gray Whales**

# **Gray Whale Foraging Index Within Proposed Special Closures (based on shore surveys)**

Draft MPA Proposal	Proposed Special Closure	Whales Weighted Forage Area
Proposal 0	None	0
Ruby 1	Castle Rock Special Closure	<0.01
Ruby 2	None	0
Sapphire 1	Castle Rock Special Closure	<0.01
Sapphire 2	Castle Rock Special Closure (seasonal)	<0.01



## **Marine Bird and Mammal Analyses**

**Analysis 4: Protection of Waterfowl and Shorebirds and their Habitats** 

Investigated shorebird protection in Humboldt Bay, number and quality of estuaries protected and percent of available shorebird and waterfowl habitat protected



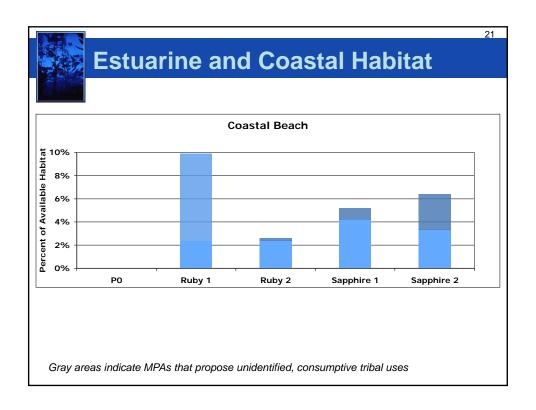




9

						19
Shore	bird A	na	lysi	s: F	lumbo	ldt Bay
Comparison between d Humboldt Bay	raft MPA pro	posals	of shore	ebird pr	otection in	
	Arcata Bay		Godwit hig	,	Diversity of shorebirds at	Density of shorebirds at monitoring sites (daily
Area Name	western shore included?	Samoa Bridge	Bayshore	Elk River Mouth	monitoring sites (total species)	high count/length of tide line in meters)
Proposal 0 (None in Proposal 0)						
Ruby 1						
North Humboldt Bay SMRMA	Yes	No	No	No	11, 10, 10	0.33, 0.50, 2.42
South Humboldt Bay SMRMA	No	No	No	No	12, 10	1.37, 0.50
Ruby 2						
South Humboldt Bay SMRMA	No	No	No	No	12	1.37
Sapphire 1						
North Humboldt Bay SMRMA	Yes	No	No	No	11, 10, 10	0.33, 0.50, 2.42
South Humboldt Bay SMRMA	No	No	No	No	12	1.37
Sapphire 2						
South Humboldt Bay SMRMA	No	No	No	No	12	1.37

							2
<b>Water</b>	fowl A	naly	/Sis				
Comparison between o protected	draft MPA pro	posals o	t estuary	species	and area		
notected							
	Percent Area						
	of Estuary in	Dabbling	Diving				
Area Name	Proposed MPA	Ducks	Ducks	Geese	Seaducks	Shorebirds	Swans
Ruby 1							
Stone Lagoon SMRMA	100.00%	low	low	N/A	low	low	N/A
North Humboldt Bay SMRMA	11.50%	medium	high	low	low	medium	N/A
South Humboldt Bay SMRMA	25.68%	medium	high	high	high	high	high
Ruby 2							
South Humboldt Bay SMRMA	5.94%	medium	hiah	hiah	hiah	hiah	hiah
Sapphire 1	0.7170	modium	g			g	g
North Humboldt Bay SMRMA	11.63%	medium	high	low	low	medium	N/A
,	22.11%	medium	high	high	high	high	high
South Humboldt Bay SMRMA							
South Humboldt Bay SMRMA Sapphire 2							





#### **Estuarine and Coastal Habitat**

 Estuarine habitats are captured in SMCAs, SMRMAs and state marine parks that do not

meet criteria to provide benefit for seabirds

- Estuarine habitats are captured in SMCAs that propose tribal uses so may or may not meet the criteria to provide benefit for seabirds. Those SMCAs are:
  - Ruby 1 Ten Mile Estuary SMCA
  - Ruby 2 -Ten Mile Estuary SMCA
  - Sapphire 1 Ten Mile Estuary SMCA and Navarro River Estuary SMCA
  - Sapphire 2 Ten Mile Estuary SMCA





### **Round 2 Summary: Birds**

#### • Ruby 1

- Inclusion of Flatiron Rock and Green Rock special closures, provides for the most number of breeding and roosting seabirds
- Protects the most hot spots and neritic foraging areas, is competitive in the nearshore foraging areas, and provides the most estuarine habitat in Humboldt Bay

#### Sapphire 1 and 2

 Provides intermediate benefits to seabirds, with Sapphire 1 providing more benefits primarily because of the inclusion of the Vizcaino Rock Special Closure

#### Ruby 2

 Provides the least benefit in regards to seabirds primarily because of its exclusion of a Castle Rock Special Closure



#### **Round 2 Summary: Mammals**

24

- Harbor seal haulouts and forating areas underrepresented in all proposals
- Very few proposed SMRs would benefit marine mammals
- Ruby 1 and Sapphire 1 benefits highest # pinnipeds overall, including Steller and California sea lions
  - Inclusion of Sugarloaf Island and SW Seal Rock special closures significant for Steller sea lions
  - Captured a pinniped breeding hot spot Castle Rock Special Closure
- Sapphire 2 moderate benefits to pinnipeds
  - Inclusion of Sugarloaf Island and Castle Rock special closures
- Ruby 2 fewest benefits in regards to marine mammals



## **Round 2 Summary: Special Closures**

#### **Special Closures**

- Are the most important part of the draft MPA proposals for seabirds
- Seasonal closures for seabirds should include dates between March 1 and August 30 at a minimum
- Afford large benefits to pinnipeds while on shore
- Provide less benefit to foraging marine mammals





# **Round 2 Summary Table: Birds**

Analysis	P0	RU1	RU2	SA1	SA2
Seabird Breeding Colonies		High	Low	Moderate	Moderate
Seabird Roost Sites		Moderate	Moderate	Moderate	Moderate
Seabird Breeding Hot Spots		High	Low	Moderate	Moderate
Nearshore Foraging - Seabird		Moderate	Moderate	Moderate	Moderate
Seabird Neritic Foraging		High	Low	High	Moderate
Waterfowl		High	Low	Moderate	Moderate
Shorebirds		High	Low	High	Low
Estuarine and Coastal Habitats		Moderate	Moderate	Moderate	Moderate

High, moderate and low ratings are in relation to other proposals and do not necessarily indicate actual level of benefit



# **Round 2 Summary Table: Mammals**

Analysis	P0	RU1	RU2	SA1	SA2
Pinniped Hot Spots		Moderate	Low	Moderate	Low
Pinniped Haulout Overall		High	Moderate	High	Moderate
Steller Sea Lion		High	Low	High	Moderate
Harbor Seal		Low	-	Low	Low
California Sea Lion		High	Low	High	Moderate
Nearshore Foraging - Pinniped		-	-	-	-
Gray Whale Foraging		-	-	-	-
Marine Mammal Neritic Foraging		-	-	-	-
	1				

High, moderate and low ratings are in relation to other proposals and do not necessarily indicate actual level of benefit